

REMARKS:

Claims 1-16 and 21-24 are currently pending in the present application.

Claims 1, 2, 5-10, 12-16, and 21-24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,135,486 to G.S. Wing ("*Wing*"). Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Wing* as applied to Claim 8. Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Wing* in view of U.S. Patent No. 4,976,396 to Carlson et al. ("*Carlson*").

Claims 1 and 23 are hereby amended to more particularly point out and distinctly claim the invention.

The Applicants submit that the foregoing amendments add no new matter to the application.

Interview Summary:

Applicants acknowledge with appreciation Examiner Michael Kreiner and Supervisory Patent Examiner Michael Mansen granting an Examiner Interview on 3 February 2010 with Applicants' attorney James E. Walton and technical assistant Noah Tevis.

In the Examiner Interview, it was first discussed as to what claim terminology would make it clear to the Examiners that the leading edge member of Claim 1 is separate and not integral from an entire wing skin. The Examiners indicated that removing the word "portion" and replacing it with "member" would traverse the rejection of Claim 1 under 35 U.S.C. 102(b) as being anticipated by *Wing*. The Applicants have herein amended Claims 1 and 23 so as to replace the word "portion" with the word "member."

The Examiners advised that they will consider U.S. Pat. No. 2,427,065, to Nebesar, as a reference. The Examiners further advised to make distinguishing remarks in view of Nebesar being a possible reference.

REJECTIONS UNDER 35 U.S.C. § 102(b):

Claims 1, 2, 5-10, 12-16, and 21-24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Wing*.

Wing discloses a wing skin in which the leading edge portion is **integral** to the primary wing skin. In the case of *Wing*, the leading edge portion of the skin is simply the portion of the wing skin that is first to engage the airstream during forward flight. The airfoil skin attaches to leading edge formers as well as trailing edge formers, indicating that the skin covers more than just the leading edge portion (*Wing*, Col. 2, lines 1-4, Fig. 6 and Fig. 7). If a foreign object, such as a bird, were to strike the leading edge portion of the wing skin in *Wing*, the damage would likely require extensive repairs and/or replacement of the entire wing skin, or the entire wing itself. This is largely due to the fact that the wing skin is a single structure that covers the entire wing, and that the wing skin in a continuous single part without any means for attenuating energy from an impact from an object during flight.

In contrast, Claim 1, as hereby amended, is directed to a leading edge member that forms a separate and distinct physical member from the substructure behind the leading edge member. This allows the leading edge member to be configured to deform on impact, thereby minimizing damage to the substructure of the aircraft. An example of such substructure would be: remaining airfoil skin portions, a trailing edge, and internal structural components such as spars and ribs. In contrast, the leading edge portion of the skin in *Wing* is integral to the entire wing skin and is not configured to protect substructure from a collision with an object. *Wing* discloses a configuration that provides a direct load path from leading edge portion of the skin to the substructure, which is at least partially what the leading edge member of Claim 1 seeks to avoid.

In summary, the leading edge member of Claim 1 is a separate and distinct member, whereas the leading edge portion of the wing skin in *Wing* is integrated into the entire wing skin. Moreover, the leading edge member of Claim 1 is configured to deform on impact, thereby protecting the substructure by absorbing impact energy from a collision with an object. Thus, because *Wing* fails to disclose all of the limitations of Claim

1, *Wing* cannot anticipate Claim 1. For at least these reasons, the Applicants submit that Claim 1, as amended, is not anticipated by *Wing*.

The Applicants submit that the Examiner's rejection of Claim 1 under 35 U.S.C. § 102(b) is traversed and that Claim 1, as amended, is now in condition for allowance. Therefore, it is respectfully requested that the rejection of Claim 1 under 35 U.S.C. § 102(b) be reconsidered and withdrawn, and that Claim 1, as amended, be allowed.

Claim 1 is an independent claim. Claims 2, 5-10, 12-16, and 21-24 are dependent claims based upon Claim 1 and intervening claims. As such, the Applicants submit that all of the distinguishing remarks set forth above with respect to Claim 1 and *Wing* apply equally to the Examiner's rejections under 35 U.S.C. § 102(b) of Claims 2, 5-10, 12-16, and 21-24.

Because *Wing* fails to disclose all of the limitations of Claims 1, 2, 5-10, 12-16, and 21-24, and because Claims 2, 5-10, 12-16, and 21-24 are dependent claims based upon Claim 1 and intervening claims, the Applicants submit that *Wing* cannot anticipate Claims 2, 5-10, 12-16, and 21-24. Thus, for at least these reasons, the Applicants submit that Claims 2, 5-10, 12-16, and 21-24, as amended, are not anticipated by *Wing*.

Therefore, the Applicants submit that the Examiner's rejections of Claims 2, 5-10, 12-16, and 21-24 under 35 U.S.C. § 102(b) are traversed and that Claims 2, 5-10, 12-16, and 21-24, as amended, are now in condition for allowance. Therefore, it is respectfully requested that the rejections of Claims 2, 5-10, 12-16, and 21-24 under 35 U.S.C. § 102(b) be reconsidered and withdrawn, and that Claims 2, 5-10, 12-16, and 21-24, as amended, be allowed.

REJECTIONS UNDER 35 U.S.C. § 103(a):

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Wing* as applied to Claim 8. Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Wing* in view of *Carlson*.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Wing* as applied to Claim 8. The Examiner states that it would have been obvious to one skilled in the art at the time of the invention to create different pockets on opposing sides of the protective skin.

Claim 11 is dependent upon Claim 1 and intervening Claim 8. The Applicants reiterate here the distinguishing remarks set forth above with regard to Claim 1. In addition, the Applicants submit that *Wing* fails to disclose, teach, suggest, or mention all of the features and limitations of Claims 1, 8, and 11. As such, the Applicants submit that it would not have been obvious to one skilled in the art at the time of the invention to use *Wing* to arrive at the claimed invention. For at least these reasons, the Applicants submit that Claim 11 is not rendered obvious by *Wing*.

Because *Wing* fails to disclose, teach, suggest, or mention all of the features and limitations of Claims 1, 8, and 11, and because Claim 11 is a dependent claim based upon Claim 1 and intervening Claim 8, the Applicants submit that it would not have been obvious to one skilled in the art at the time of the invention to use *Wing* to arrive at the invention of Claim 11. Thus, for at least these reasons, the Applicants submit that Claim 11 is not rendered obvious by *Wing*.

As such, the Applicants submit that the Examiner's rejection of Claim 11 under 35 U.S.C. § 103(a) is traversed and that Claim 11 is now in condition for allowance. Therefore, it is respectfully requested that the rejection of Claim 11 under 35 U.S.C. § 103(a) be reconsidered and withdrawn, and that Claim 11 be allowed.

Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) over *Wing* in view of *Carlson*. With regard to Claim 3, the Examiner states that it would have been obvious to one skilled in the art at the time of the invention to apply *Wing*'s reduced-weight leading

edge to horizontal stabilizers, and to apply Wing's reduced-weight leading edge to a vertical fin.

Claims 3 and 4 are dependent upon Claim 1. The Applicants reiterate here the distinguishing remarks set forth above with regard to Claim 1. In addition, the Applicants submit that *Wing* fails to disclose, teach, suggest, or mention all of the features and limitations of Claims 1, 3, and 4. *Carlson* fails to cure this deficiency of *Wing*. *Carlson*, like *Wing*, at least fails to disclose, teach, suggest, or mention a leading edge member configured to protect the substructure by absorbing impact energy from a collision, as disclosed in Claim 1, and therefore, also fails to disclose, teach, suggest, or mention the more specific limitations recited in Claims 3 and 4. Thus, *Wing* and *Carlson*, whether considered separately or in combination, as proposed by the Examiner, fail to disclose, teach, suggest, or mention all of the limitations of Claims 3 and 4.

Because *Wing* and *Carlson* fail to disclose, teach, suggest, or mention all of the features and limitations of Claims 1, 3, and 4, and because Claims 3 and 4 are dependent claims based upon Claim 1, the Applicants submit that it would not have been obvious to one skilled in the art at the time of the invention to use *Wing* and/or *Carlson* to arrive at the invention of Claims 3 and 4. Thus, for at least these reasons, the Applicants submit that Claims 3 and 4 are not rendered obvious by *Wing*, *Carlson*, or any combination thereof.

As such, the Applicants submit that the Examiner's rejections of Claims 3 and 4 under 35 U.S.C. § 103(a) are traversed and that Claims 3 and 4 are now in condition for allowance. Therefore, it is respectfully requested that the rejections of Claims 3 and 4 under 35 U.S.C. § 103(a) be reconsidered and withdrawn, and that Claims 3 and 4 be allowed.

Nebesar As Possible 35 U.S.C. § 102(b) Reference:

Nebesar discloses a composite wing member having several composite details which are mated together through tapered edges and wedges. The leading edge portion

includes a top and a bottom portion which are connected through a tapered end and a wedge member (Figure 5). Skin stiffeners (Reference C in Figure 2) are built up on the inner side of the skin by molding. Furthermore, the wing in Nebesar is built with laminates, as such; laminates are typically very brittle and provide little ductility. A leading edge must have ductility in order to absorb an impact so as to provide any significant absorbing deformation during impact with an object.

In contrast, Claim 1 of the claimed invention includes pockets recessed into the interior surface of the leading edge member, each pocket defining a region of the leading edge member having a pocket thickness that is less than the surface thickness of the leading edge member. Further, each pocket is configured to deform in response to an impact from an object. For at least these reasons, Applicants submit that Nebesar does not support a possible 35 U.S.C. 102(b) rejection of Claim 1.

CONCLUSION:

The Applicants submit that the foregoing amendments and remarks place the subject application in condition for allowance. As such, the Applicants respectfully request reconsideration and a Notice of Allowance.

This Amendment is being filed via the U.S. Patent and Trademark Office's EFS-Web electronic filing system. No fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any additional fees which may be required, or credit any overpayments, to **Deposit Account No. 502806**.

Respectfully submitted,

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